

Associations between High School Students' Social-Emotional Competencies and Their High School and College Academic and Behavioral Outcomes in the Commonwealth of the Northern Mariana Islands

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Associations between High School Students' Social-Emotional Competencies and Their High School and College Academic and Behavioral Outcomes in the Commonwealth of the Northern Mariana Islands

Marisa K. Crowder, Samantha E. Holquist, Bradley Rentz, and Sheila A. Arens

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This study addressed the need expressed by education stakeholders in the Commonwealth of the Northern Mariana Islands to better understand their high school students' social-emotional competencies and how those competencies might be associated with students' academic and behavioral outcomes in high school and college. Social-emotional competencies refer to the knowledge, beliefs, and behaviors that help students recognize and manage their emotions, build positive relationships, and make responsible decisions. In May 2019 grade 11 and 12 students who were enrolled in high schools within the Commonwealth of the Northern Mariana Islands Public School System responded in May 2019 to survey questions regarding their self-management, growth mindset, self-efficacy, sense of belonging, and social awareness using a 5-point scale, with higher scores reflecting greater social-emotional competencies. The study found that high school students and high school students who went on to attend Northern Marianas College scored highest in self-management and lowest in self-efficacy. High school students with higher growth mindset or self-efficacy scores had higher high school grade point averages and grade 10 ACT Aspire math and reading scale scores. Higher self-efficacy scores were also associated with fewer days absent from high school. Students with higher social awareness scores had lower high school grade point averages. Among the high school students who went on to attend college at Northern Marianas College, higher growth mindset scores were associated with higher first semester college grade point averages, after student characteristics were controlled for. None of the four other social-emotional competency domains was associated with any of the college academic or behavioral outcomes.

Why this study?

Education stakeholders in the Commonwealth of the Northern Mariana Islands (CNMI) are interested in understanding the associations between their high school students' social-emotional competencies and the students' academic and behavioral outcomes in high school and college (see box 1 for definitions of key terms). Social-emotional competencies refer to the knowledge, attitudes, and behaviors that help students recognize their emotions, strengths, and weaknesses; manage their emotions; build and maintain positive relationships; and make responsible decisions (Weissberg et al., 2015).

The interest in understanding students' social-emotional competencies stems in part from a previous Regional Educational Laboratory Pacific study that showed that many students in the CNMI might be unprepared for college when they graduate from local public high schools (Herman et al., 2017). The study found that 92 percent of CNMI Public School System students who entered Northern Marianas College placed into non-credit-bearing, or developmental, math courses, and 80 percent placed into non-credit-bearing English courses. Students were more likely to be placed into credit-bearing courses if they had better high school academic preparation, such as enrollment in Advanced Placement courses or more advanced math courses, higher grade point averages, and higher

For additional information, including background on the study, technical methods, supporting analyses, and supplementary analyses, access the report appendixes at <https://go.usa.gov/x6tgF>.

standardized test scores. Interest also stems from other research showing that promoting students' social-emotional competencies is positively associated with improvements in student learning and, ultimately, their academic and behavioral outcomes (Carneiro et al., 2007; Durlak et al., 2011; West et al., 2018). Thus, stakeholders in the CNMI expressed interest in identifying the social-emotional competencies that are associated with students' high school and college academic and behavioral outcomes in the CNMI.

Box 1. Key terms

College academic outcomes. The study analyzed four college academic outcomes:

- *First semester college grade point average:* a student's grade point average at the end of the first semester at Northern Marianas College. Values range from 0 to 4.0.
- *Enrollment in developmental math:* enrolling in any developmental or non-credit-bearing math course during the first semester at Northern Marianas College.
- *Enrollment in developmental English:* enrolling in any developmental or non-credit-bearing English course during the first semester at Northern Marianas College.
- *Completed all attempted credits:* completing all credits attempted (in credit-bearing courses) during the first semester at Northern Marianas College.

College behavioral outcome. The study analyzed one college behavioral outcome:

- *Persistence into a second semester:* enrolling in Northern Marianas College for a second semester (spring 2020).

College student characteristics. The analyses considered three college student characteristics:

- *Gender:* A student's reported gender.
- *Northern Marianas descent:* whether the student was of Northern Marianas descent, defined as being CHamoru or Refaluwasch (Carolinian).¹
- *Pell Grant recipient:* Whether a student received a Pell Grant during the first semester at Northern Marianas College. Pell Grants are awarded to undergraduate students who have a high degree of financial need. Most Pell Grant money goes to students with a total family income below \$20,000.

High school academic outcomes. The study analyzed three high school academic outcomes:

- *High school grade point average:* A student's cumulative high school grade point average at the end of the 2018/19 academic year. For grade 11 students this represents the average of all course grades from grades 9 through 11, and for grade 12 students it includes grades 9 through 12. Grade point average values range from 0 to 100, where 0–62 represents an F average, 63–72 a D average, 73–82 a C average, 83–92 a B average, and 93–100 an A average.
- *Grade 10 ACT Aspire math scale score:* A student's numeric score on the ACT Aspire math standardized assessment in grade 10. Possible scores range from 400 to 460, where a score of 432 is the grade 10 benchmark for math.
- *Grade 10 ACT Aspire reading scale score:* A student's numeric score on the ACT Aspire reading standardized assessment in grade 10. Possible scores range from 400 to 442, where a score of 428 is the grade 10 benchmark for reading.

High school behavioral outcome. The study analyzed one high school behavioral outcome:

- *Number of days absent in at least one course:* Number of instructional days that a student missed in at least one course while enrolled in a Commonwealth of the Northern Mariana Islands (CNMI) high school during 2018/19.

High school students. Grade 11 and 12 students who attended a CNMI public high school in 2018/19 and completed the social-emotional competencies survey in May 2019.

High school student characteristics. The analysis considered four high school student characteristics:

- *Gender:* A student's reported gender.
- *Ethnicity:* A student's reported ethnicity.
- *Grade level:* A student's grade level.
- *High school:* The CNMI public high school in which a student was enrolled when taking the social-emotional competencies survey.

High school students who went on to attend college. Students who graduated from a CNMI public high school in spring 2019 and then enrolled in Northern Marianas College in the fall 2019 semester and for whom social-emotional competencies survey data were available.

Positive and negative associations. A positive association indicates that students with higher social-emotional competency scores tend to have higher scores on their academic and behavioral outcomes. A negative association indicates that students with higher social-emotional competency scores tend to have lower scores on their academic and behavioral outcomes.

Survey scales and scale scores. A survey scale is a set of survey questions that measure the same concept. Responses to the survey questions are quantified using a response scale. A scale score is the average value of each question within the survey scale.

Social-emotional competencies. The CNMI Public School System administered a social-emotional competencies survey in May 2019 that assessed students' self-reported responses to items in each of five domains (Transforming Education, 2016; Whiting et al., 2017). Five sets of scale scores ranging from 1 to 5 (where higher scores reflected greater social-emotional competency) were created by averaging self-reported responses to items in each domain:

- *Self-management:* Ability to regulate one's emotions and behaviors.
- *Growth mindset:* Belief that one is capable of learning.
- *Self-efficacy:* Belief that one can achieve one's academic goals.
- *Sense of belonging:* Belief that one is socially connected to peers and teachers.
- *Social awareness:* Ability to empathize with others.

Note

1. This report uses the names of Indigenous groups in the Commonwealth of the Northern Mariana Islands (CNMI) in their own languages: CHamoru (Chamorro) and Refaluwasch (Carolinian). The CNMI Public School System and Northern Marianas College use different measures to collect data on students' ethnicity. The measure used by the Northern Marianas College to collect information on student Indigenous groups was used for examining college students because it provides more detailed information on students' ethnicity for CNMI stakeholders.

The CNMI Public School System provided researchers with data from a social-emotional competencies survey administered in May 2019 to students in grades 11 and 12, which included items from the California Office to Reform Education Social and Emotional Learning Survey (Transforming Education, 2016) and the Simple School Belonging Scale (Whiting et al., 2017). Educators use aggregated scores on five domains—self-management, growth mindset, self-efficacy, sense of belonging, and social awareness—to monitor students' social-emotional competencies and inform practices to promote the competencies being assessed (Taylor et al., 2018). For instance, if the survey data reveal that students in a class or school report lower than average scores in a particular domain, that can cue educators to identify ways to improve current practices or identify new ways to support their students in that area. This survey was the first time that educators in the CNMI had systematically collected data on students' social-emotional competencies in a way that would support educators' understanding how those competencies are associated with their academic and behavioral outcomes.

Implementing systems that support students' social-emotional competencies can inform practices aimed at promoting students' academic preparedness. The Public School System and Northern Marianas College have developed and implemented a high school math transition course that, in addition to advancing students' academic knowledge to enable their enrollment in credit-bearing math courses at Northern Marianas College, promotes students' social-emotional competencies to support their engagement in learning (Encinares, 2019). The CNMI Public School System is also providing whole-child student supports, as described in its mission statement (Commonwealth of Northern Marianas Islands Public School System, n.d.), and has implemented a systemwide social-emotional learning initiative, Trauma Advised Student Advocacy: A Multi-Tiered Systems of Support Project (Project TASA). Education stakeholders in the CNMI have expressed interest in informing these efforts with a greater understanding of students' social-emotional competencies and their associations with students' high school and college academic and behavioral outcomes. Leaders in the Public School System and Northern Marianas College requested support from REL Pacific in addressing this need.

The goal of the study was to deepen CNMI stakeholders' understanding of their students' social-emotional competencies and of how these competencies are associated with students' academic and behavioral outcomes. Investigating the associations between students' social-emotional competencies and their high school and college academic and behavioral outcomes can support educators in tailoring their social and emotional learning activities to support their students' social and emotional learning (West et al., 2018).

Research questions

This study examined outcomes for CNMI public high school students in grades 11 and 12 during school year 2018/19 who completed the social-emotional competencies survey (the sample for research questions 1 and 2) and a subset of these high school students who went on to attend Northern Marianas College in fall 2019 (the sample for research questions 3 and 4).

The study addressed four research questions:

1. What were the high school students' scores for each of the social-emotional competency domains?
2. To what extent were social-emotional competency scores associated with students' high school academic and behavioral outcomes, after high school student characteristics were controlled for?
3. What were the scores of high school students who went on to attend college for each of the social-emotional competency domains?
4. To what extent were social-emotional competency scores associated with students' early college academic and behavioral outcomes, after college student characteristics were controlled for?

In light of prior research demonstrating a link between social-emotional competencies and students' academic and behavioral outcomes, the following outcomes were chosen for this study:

- High school academic outcomes: grade point average, grade 10 scores on the ACT Aspire math scale, and grade 10 scores on the ACT Aspire reading scale.
- High school behavioral outcomes: number of days absent in at least one course.
- College academic outcomes: first semester college grade point average, enrollment in developmental math, enrollment in developmental English, and completion of all attempted credits in the first semester.
- College behavioral outcomes: persistence into a second semester.¹

Additional information about social-emotional competencies in the CNMI context is in appendix A.

The data, sample, and methods used in this study are summarized in box 2 and discussed in detail in appendix B.

1. As the decision to re-enroll in, or drop out of, college is considered a behavior and is affected by behavioral interventions, the study regarded persistence into a second semester as a behavioral outcome (Bettinger et al., 2019).

Box 2. Data sources, sample, and methods

Data sources. The Commonwealth of the Northern Mariana Islands (CNMI) Public School System provided data on high school students' social-emotional competency scores from the social-emotional competencies survey administered in May 2019 and on student characteristics and academic and behavioral outcomes from administrative records. Northern Marianas College provided data on college student characteristics and academic and behavioral outcomes data from administrative records. A complete list of variables examined in the study is in appendix B.

Sample. The study had two analytic samples. The sample for research questions 1 and 2 included students who were in grade 11 or 12 at a CNMI public high school during the 2018/19 academic year, who completed the social-emotional competencies survey administered in May 2019, and whose survey results could be linked to high school data on student characteristics and high school academic and behavioral outcomes. This sample consisted of 439 students (32 percent of grade 11 and 12 students enrolled in a public high school). Because most of the students who completed the social-emotional competencies survey attended Marianas High School ($n = 388$; 88 percent), this high school is disproportionately represented in the survey data and associated findings.

The sample for research questions 3 and 4 was limited to students in grade 12 at a CNMI public high school during the 2018/19 academic year who completed the social-emotional competencies survey and for whom responses could be linked to fall 2019 and spring 2020 data provided by Northern Marianas College. This sample consisted of 82 students (35 percent of students from the participating public high schools who graduated in 2019 and enrolled at Northern Marianas College in fall 2019). The number of students included in the regression models varied because of missing data for some variables. (See appendix B for additional details about the sample and appendix D for additional details about the representativeness of the study samples.)

Methodology. The study team generated descriptive statistics (means) to describe social-emotional competencies for both study samples (research questions 1 and 3). Five sets of scale scores ranging from 1 to 5 (where higher scores reflect greater social-emotional competency) were created by averaging self-reported responses to survey items in each of five domains. For instance, a student's scores for the self-management domain were calculated as the average of the student's responses across the nine items used to measure self-management.

The study team also ran regression analyses that controlled for student characteristics to examine the association between social-emotional competencies and high school and college academic and behavioral outcome (research questions 2 and 4). For statistically significant social-emotional competency predictor variables in the regression models, the study team calculated predicted means for the outcome variable at specified levels of the predictor variables, while holding the other variables constant.

For additional information on the study's methodology, see appendix B.

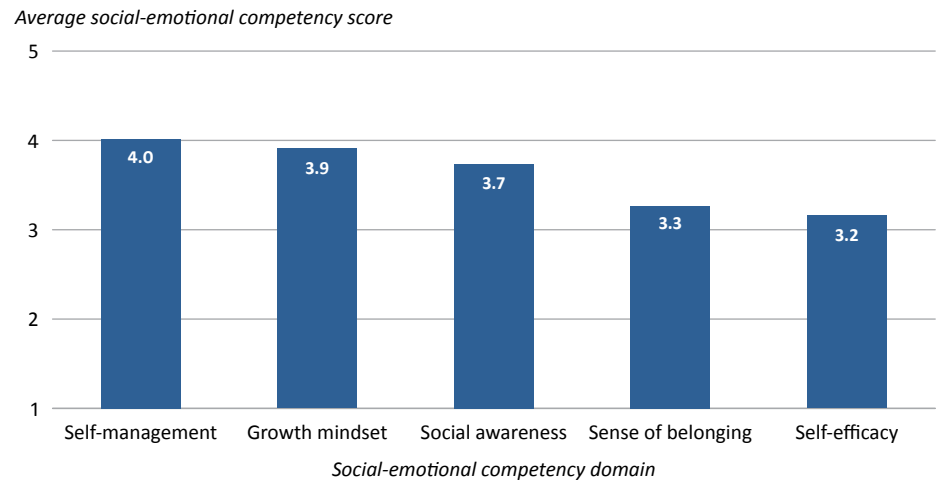
Findings

This section describes the statistically significant findings for the four research questions, as summarized in table 1. Additional detailed findings are in appendix C, and supplementary analyses are in appendix D.

Of the five social-emotional competency domains in the survey, high school students scored highest in self-management and lowest in self-efficacy

High school students had an average score above the midpoint of 3.0 out of 5.0 in each social-emotional competency domain (figure 1; see table C1 in appendix C). High school students scored highest in self-management, with an average score of 4.0. The second-highest score was growth mindset, with an average score of 3.9, followed by social awareness at 3.7, sense of belonging at 3.3, and self-efficacy at 3.2.

Figure 1. Among the five social-emotional competency domains, high school students scored highest on self-management, with an average score of 4.0, and the lowest on self-efficacy, with an average score of 3.2



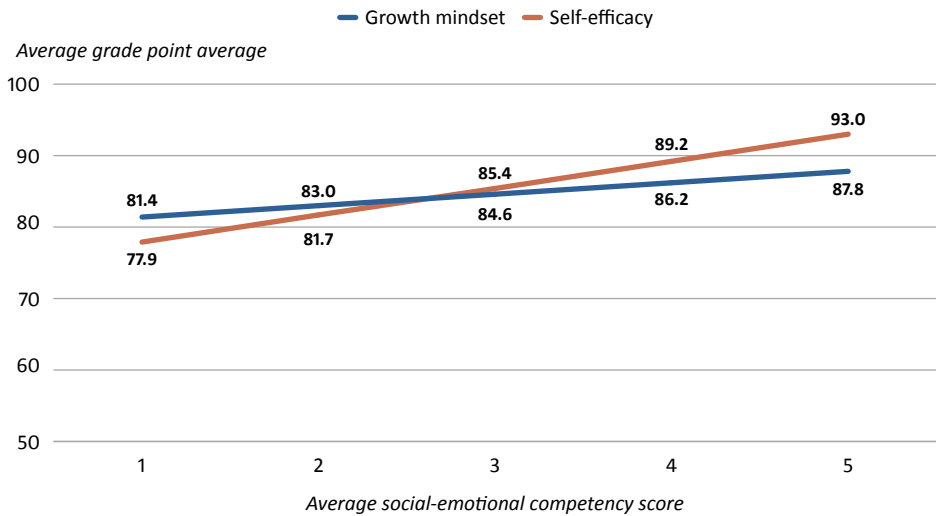
Note: $n = 439$. Scale scores in each domain range from 1 to 5, and higher scores reflect greater social-emotional competency.

Source: Authors’ analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System for students who had completed the survey and were enrolled in one of the five participating high schools in 2018/19.

High school students with higher growth mindset or self-efficacy scores had higher high school grade point averages, after high school student characteristics were controlled for

High school students’ scores on the growth mindset and self-efficacy competency domains were positively associated with their high school grade point averages, after high school student characteristics were controlled for (figure 2). High school students with an average score of 5 on the growth mindset competency domain had an average grade point average of 87.8, compared with an average grade point average of 81.4 for students with an average score of 1 on the same domain. Similarly, high school students with an average score of 5 on the

Figure 2. High school students with higher scores on the growth mindset or self-efficacy competency domain had higher high school grade point averages after high school student characteristics were controlled for



Note: $n = 433$. Scale scores in each domain range from 1 to 5, and higher scores reflect greater social-emotional competency.

Source: Authors’ analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System for students who had available high school grade point average data and who were enrolled in one of the five participating high schools in 2018/19.

self-efficacy competency domain had an average grade point average of 93.0, compared with an average grade point average of 77.9 for students with an average score of 1 on the same domain.

High school students with higher social awareness scores had lower high school grade point averages, after high school student characteristics were adjusted for

High school students' scores on the social awareness competency domain were negatively associated with their high school grade point averages, after high school student characteristics were controlled for (figure 3). High school students with an average score of 1 on the social awareness domain had an average high school grade point average of 92.1, compared with an average high school grade point average of 83.2 for students with an average score of 5 on the same domain.

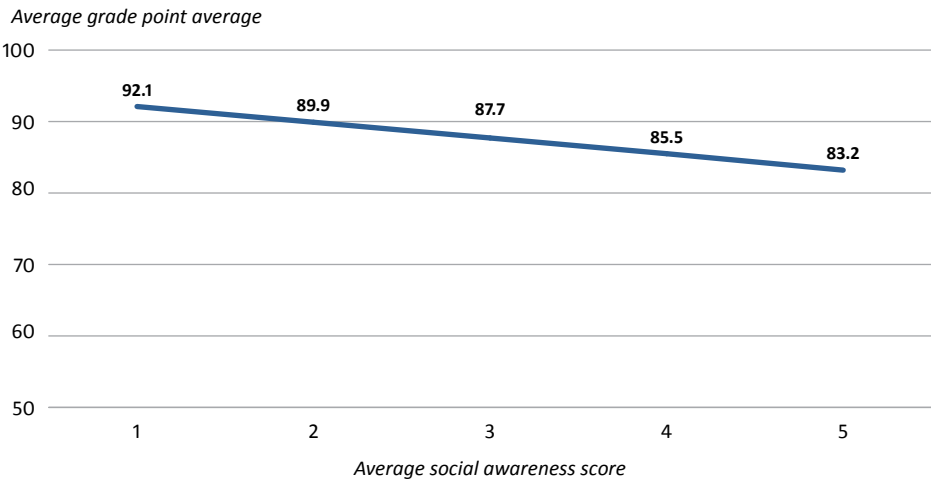
High school students with higher growth mindset or self-efficacy scores had higher grade 10 ACT Aspire math scale scores, after high school student characteristics were controlled for

High school students' scores on the growth mindset and self-efficacy competency domains were positively associated with their grade 10 ACT Aspire math scale scores, after high school student characteristics were controlled for (figure 4). High school students with an average score of 5 on the growth mindset domain had an average grade 10 ACT Aspire math scale score of 421.4, compared with an average score of 416.7 for students with an average score of 1 on the same domain. High school students with an average score of 5 on the self-efficacy domain had an average grade 10 ACT Aspire math scale score of 424.3 compared with an average score of 415.2 for students with an average score of 1 on the same domain.

High school students with higher growth mindset or self-efficacy scores had higher grade 10 ACT Aspire reading scale scores, after high school student characteristics were controlled for

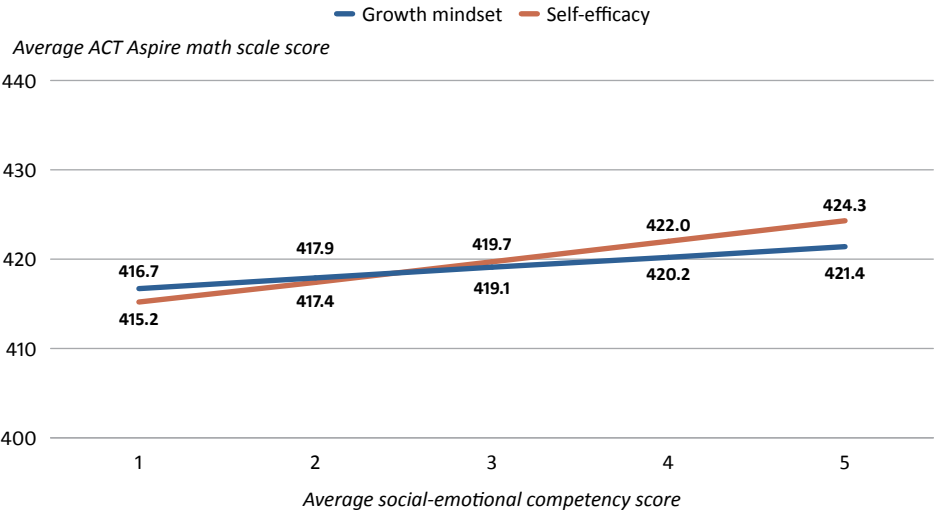
High school students' scores on the growth mindset and self-efficacy competency domains were positively associated with their grade 10 ACT Aspire reading scale scores, after high school student characteristics were controlled for (figure 5). High school students with an average score of 5 on the growth mindset competency domain had

Figure 3. High school students with higher scores on the social awareness competency domain had lower high school grade point averages



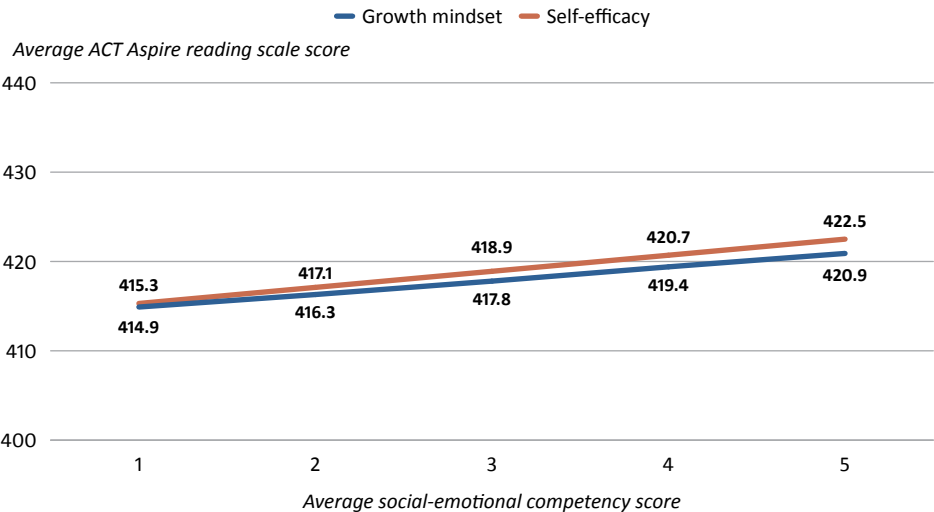
Note: $n = 433$. Scale scores in each domain range from 1 to 5, and higher scores reflect greater social-emotional competency.
Source: Authors' analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System for students who had available high school grade point average data and were enrolled in one of the five participating high schools.

Figure 4. High school students with higher scores on the growth mindset or self-efficacy competency domains had higher grade 10 ACT Aspire math scale scores



Note: $n = 380$. Scale scores in each domain range from 1 to 5, and higher scores reflect greater social-emotional competency.
Source: Authors' analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System for students who had available ACT Aspire math scale score data and who were enrolled in one of the five participating high schools in 2018/19.

Figure 5. High school students with higher scores on the growth mindset or self-efficacy competency domain had higher grade 10 ACT Aspire reading scale scores



Note: $n = 383$. Scale scores in each domain range from 1 to 5, and higher scores reflect greater social-emotional competency.
Source: Authors' analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System for students who had available ACT Aspire reading scale score data and who were enrolled in one of the five participating high schools in 2018/19.

an average grade 10 ACT Aspire reading scale score of 420.9, compared with an average reading scale score of 414.9 for students with an average score of 1 on the same domain. A similar pattern was evident for self-efficacy; high school students with an average score of 5 on that competency domain had an average grade 10 ACT Aspire reading scale score of 422.5, compared with an average reading scale score of 415.3 for students with an average score of 1 on the same domain.

High school students with higher self-efficacy scores were absent fewer days, after high school student characteristics were controlled for

High school students’ scores on the self-efficacy competency domain were negatively associated with the number of days absent in at least one course, after high school student characteristics were controlled for (figure 6). High school students with an average score of 1 on the self-efficacy domain were marked absent an average of 30.2 days, compared with an average of 11.5 days for high school students with an average score of 5 on the same domain.

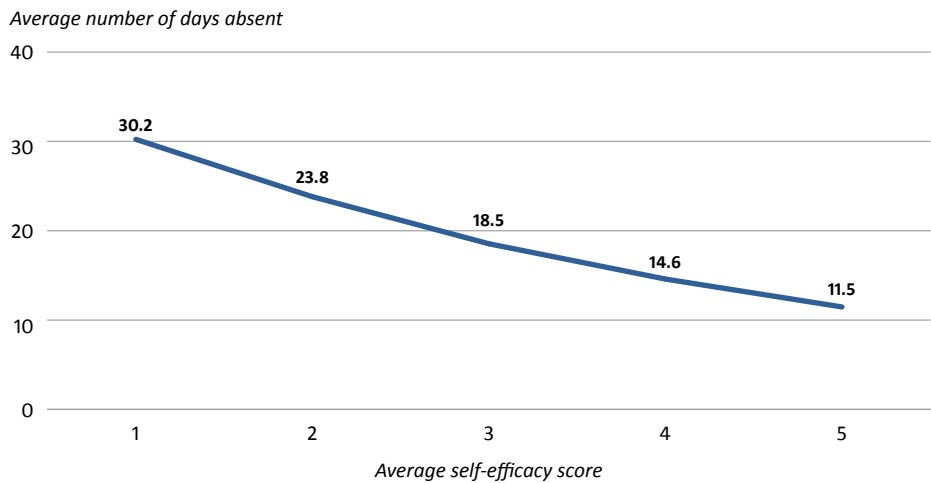
High school students’ self-management or sense of belonging scores were not associated with high school academic or behavioral outcomes, after high school student characteristics were controlled for

High school students’ scores on the self-management and sense of belonging competency domains had no clear association with high school grade point average, grade 10 ACT Aspire math scale score, grade 10 ACT Aspire reading scale score, or the number of days absent from at least one course, after high school student characteristics were controlled for (see tables C6–C9 in appendix C).

High school students who went on to attend college had their highest scores in self-management and their lowest scores in self-efficacy

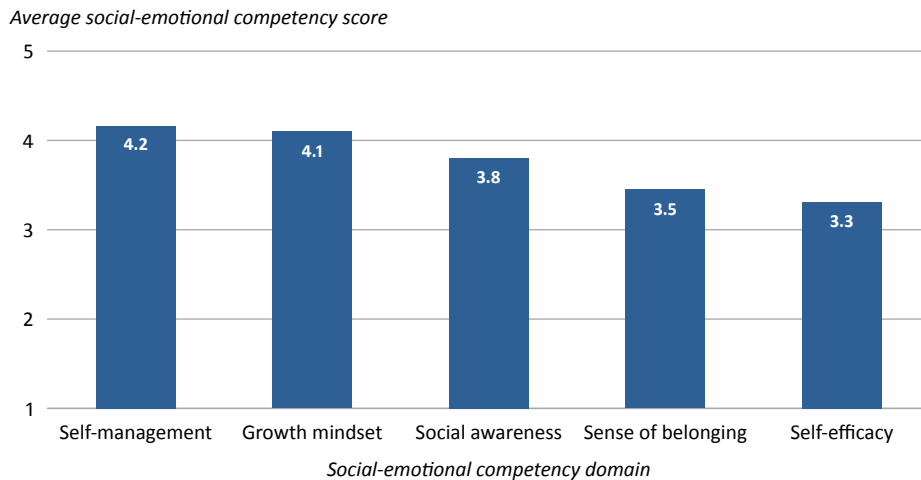
High school students who went on to attend Northern Marianas College had an average score above the midpoint of 3.0 out of 5.0 on each social-emotional competency domain (figure 7). Students scored highest on the self-management domain, with an average score of 4.2. The second highest average score was 4.1 on the growth mindset domain, followed by 3.8 on the social awareness domain, 3.5 on the sense of belonging domain, and 3.3 on the self-efficacy domain.

Figure 6. High school students with higher scores on the self-efficacy competency domain were absent fewer days from school



Note: *n* = 439. Scale scores in each domain range from 1 to 5, and higher scores reflect greater social-emotional competency.
Source: Authors’ analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System for students who had available course absence data and who were enrolled in one of the five participating high schools in 2018/19.

Figure 7. High school students who went on to attend college had their highest score on self-management, with an average score of 4.2, and their lowest score on self-efficacy, with an average score of 3.3



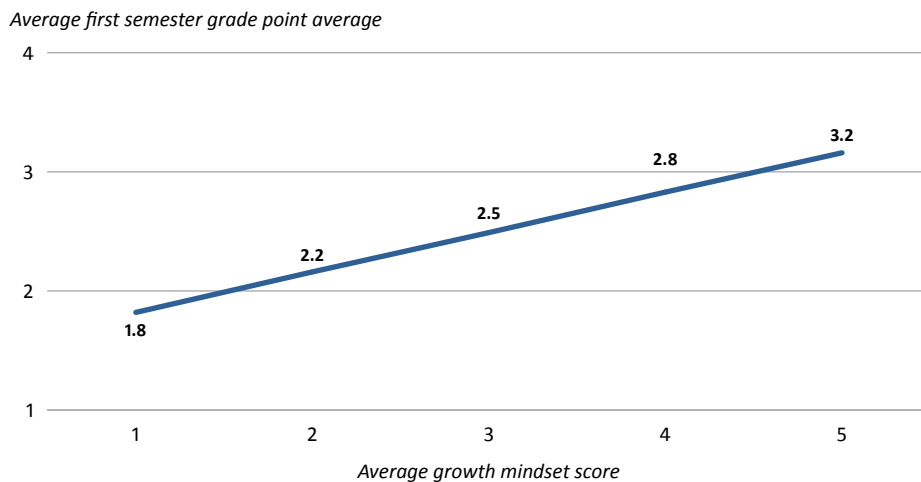
Note: $n = 82$. Scale scores in each domain range from 1 to 5, and higher scores reflect greater social-emotional competency.

Source: Authors' analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System and Northern Marianas College for grade 12 students who were in one of the five participating high schools when they completed the survey and had enrolled at Northern Marianas College for the first time during fall 2019.

Among high school students who went on to attend college, those who had higher growth mindset scores in high school had higher first semester college grade point averages, after college student characteristics were controlled for

Scores on the growth mindset competency domain among high school students who went on to attend Northern Marianas College were positively associated with first-year fall semester college grade point averages, after college student characteristics were controlled for (figure 8). Students with an average score of 5 on the growth

Figure 8. Among high school students who went on to attend college, those who had higher growth mindset scores in high school had higher first semester college grade point averages



Note: $n = 82$. Scale scores in each domain range from 1 to 5, and higher scores reflect greater social-emotional competency.

Source: Authors' analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System and Northern Marianas College for first time first-year students who were in one of the five participating high schools when they completed the survey in grade 12 and who had available first semester college grade point average data.

mindset domain had an average first semester college grade point average of 3.2, compared with a grade point average of 1.8 for students with a score of 1 on the same domain.

Scores on the growth mindset domain were not associated with enrollment in developmental math courses, enrollment in developmental English courses, completion of all attempted credits in the first semester, or persistence into a second semester, after college student characteristics were controlled for (see tables C11–C15 in appendix C).

Among high school students who went on to attend college, scores on self-management, self-efficacy, sense of belonging, and social awareness were not associated with college academic or behavioral outcomes, after college student characteristics were controlled for

Scores on the self-management, self-efficacy, sense of belonging, and social awareness competency domains among high school students who went on to attend college were not associated with first semester college grade point average, enrollment in developmental math courses, enrollment in developmental English courses, completion of all attempted credits in the first semester, or persistence into a second semester, after college student characteristics were controlled for (see tables C11–C15 in appendix C).

Scores on growth mindset, self-efficacy, and social awareness were associated with the study outcomes, after high school and college student characteristics were controlled for

Three of the five social-emotional competency domains were associated with at least one outcome examined in this study (table 1). Scores on the growth mindset domain were positively associated with high school grade point average, ACT Aspire math and reading scale scores, and first semester college grade point average. Scores on the self-efficacy domain were positively associated with high school grade point average and ACT Aspire math and reading scale scores and negatively associated with number of days absent from at least one course. Scores on the social awareness domain were negatively associated with high school grade point average.

Table 1. Summary of social-emotional competency domains and their prediction of study outcomes, 2018/19

Social-emotional competency domain	High school grade point average (n = 433)	ACT Aspire Math scale scores (n = 380)	ACT Aspire Reading scale scores (n = 383)	Number of days absent from at least on course (n = 439)	First semester college grade point average (n = 82)
Self-management	ns	ns	ns	ns	ns
Growth mindset	+	+	+	ns	+
Self-efficacy	+	+	+	–	ns
Sense of belonging	ns	ns	ns	ns	ns
Social awareness	–	ns	ns	ns	ns

ns indicates that the social-emotional competency domain is not a statistically significant predictor of the outcome, + indicates that it is a statistically significant positive predictor, and – indicates that it is a statistically significant negative predictor.

Source: For first four columns, authors’ analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System for students who had available high school academic and behavioral data and who were enrolled in one of the five participating high schools in 2018/19. For last column, authors’ analysis of linked May 2019 survey data and administrative data from the Commonwealth of the Northern Mariana Islands Public School System and Northern Marianas College for grade 12 students who were in one of the five participating high schools when they completed the survey and who had available first semester college grade point average data.

Limitations

This study had several limitations. First, it cannot provide evidence that students' social-emotional competencies have a causal relationship with students' high school and college academic and behavioral outcomes. Although the study found that growth mindset is positively associated with standardized test scores and attendance and that self-efficacy is positively associated with attendance and first-term college grade point average, other factors, such as differences in personal circumstances, teacher–student relationships, and academic support, could have contributed to these associations.

Second, less than half of students (49 percent) provided their identification number on the social-emotional competencies survey, which was needed to link the survey responses to students' high school data, thus reducing the sample size. That, in turn, meant that the subsample of high school students who went on to attend college was also small (82 students) because many students' survey responses could not be linked to their demographic, academic, and behavioral data (see appendix B for more details). The small sample size could have impeded the ability to detect statistically significant associations between students' social-emotional competencies and their college outcomes. Conversations with stakeholders suggested that this might have been the first time that the CNMI Public School System administered a survey that was not anonymous, so it is likely that protocols for communicating about and administering a confidential survey had not been established.

Third, most students (88 percent) who provided their identification number were enrolled at Marianas High School, the largest of the five public high schools in the CNMI. Enrollment at Marianas High School for the first quarter of the 2018/29 school year was 1,535, which is nearly half the total enrollment of 3,173 for all five high schools (Commonwealth of Northern Mariana Islands Public School System, 2019). Because the analytic high school sample represented 32 percent of the grade 11 and 12 population in the Public School System, the study team ran nonresponse analyses to examine how well the analytic sample reflected the student populations (see appendix D). The results confirmed that students from Marianas High School were overrepresented in the analytic sample, suggesting that findings might not be generalizable to all high school students in the CNMI.

Finally, the study did not investigate changes in students' social-emotional competencies over time. Research suggests that the social-emotional competencies examined in this study can be influenced by both student characteristics (such as their attitudes toward school and beliefs about their abilities) and external characteristics of the school environment (such as teachers' grading practices and the social-emotional supports provided at the school; Farrington et al., 2012; West et al., 2018). It is possible that students' social-emotional competencies increased or decreased between high school and college. Similarly, the associations between students' social-emotional competencies and their high school and college academic and behavioral outcomes might have changed as students got older or as they entered a new learning context. Further research is needed to examine whether these associations vary across students' developmental stages or across learning environments.

Implications

This is the first study to examine the associations between high school students' social-emotional competencies and their high school and college academic and behavioral outcomes in the CNMI. The findings highlight areas for future research and offer insight into ways that educators might want to focus their support for students' social and emotional learning.

Identify systemwide K–12 strategies to promote students' self-efficacy across grade levels

The study found that CNMI high school students and high school students who went on to attend college (who tended to have higher social-emotional competency scores than the full sample) scored lower on the self-efficacy competency

domain than on the other social-emotional competency domains. In light of the study finding that students' self-efficacy scores were associated with all high school outcomes and the findings of prior research suggesting that practices that promote students' self-efficacy can improve student outcomes (Honick & Broadbent, 2016), educators within the CNMI Public School System might want to explore ways to systematically promote students' self-efficacy across all grade levels. Research suggests that systemwide approaches to social and emotional learning are more effective at promoting students' social-emotional competencies than piecemeal approaches (Oberle et al., 2016).

Create a continuous improvement system for social and emotional learning practices

Research suggests that effective social and emotional learning practices can be developed through a continuous improvement process that relies on formative assessments of students' social-emotional competencies (Taylor, et al., 2018). Understanding students' average scores on each of the social-emotional competency domains points to ways that educators might improve efforts to promote their students' social-emotional competencies. In this study, high school students' scores ranged from 4.0 on self-management to 3.2 on self-efficacy. As educators in the Public School System continue to engage in social-emotional learning practices, they might consider monitoring any changes in students' average social-emotional competencies over time to determine whether the social-emotional learning practices are having the intended effect on students' social-emotional development.

Examine whether similar patterns are found for college students' social-emotional competencies

This study measured students' social-emotional competencies when they were in high school. Educators at Northern Marianas College might want to examine whether findings are similar for college students' self-reported social-emotional competencies. They might also want to consider promising practices for promoting students' social-emotional competencies in a college context. Future studies could examine the associations between the social-emotional competencies measured in this study and college outcomes using a larger, more representative sample of Northern Marianas College students.

Explore how students' social-emotional competencies are associated with their academic and behavioral outcomes across diverse contexts and student populations

Some of the findings of this study echo and others diverge from the findings of previous research. For instance, a study of California students found that students scored highest on self-management and lowest on self-efficacy but that their self-management and self-efficacy scores were more strongly associated with their grade point averages than were their growth mindset and social awareness scores (West et al., 2018). The current study also found that students scored highest on self-management and lowest on self-efficacy, but it did not find evidence of an association between students' self-management scores and their grade point averages. However, it did find evidence that students' self-efficacy scores were associated with their grade point averages. The study in California also found that self-management and growth mindset scores were associated with high school students' math and English language arts test scores (West et al., 2018). The current study found that growth mindset scores were associated with students' math and reading standardized test scores but did not find evidence that self-management scores were associated with these outcomes.

The current study's findings might differ from the California study (West et al., 2018) for many reasons, but two possibilities are worth mentioning here. First, the California findings did not control for variation in student background characteristics, as the current study did. Second, the current study was conducted in the CNMI, which differs in many contextual ways from California. These differences might suggest that social-emotional competency patterns might differ for groups of students according to their background and cultural context. Research should continue to examine how the associations between students' social-emotional competencies and their academic and behavioral outcomes vary across diverse student populations and contexts. Understanding this variability might enable CNMI educators to gain a deeper understanding of their students' social-emotional competencies and ways to support them.

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